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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/577,010 | 05/24/2000 | Katsumi Kanasugi | P107355-00005 | 5235 |

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EXAMINER

GONZALEZ, JULIO C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2834

DATE MAILED: 02/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/577,010

Applicant(s)

KANASUGI ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 7-11 is/are rejected.
- 7) ☒ Claim(s) 3 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishita (Patent No 4,415,848) in view of Nishimura.

Morishita discloses an electric power supply having an AC generator 1, a rectifier 2, a load 5, a battery 7, a voltage control means 6. Also, Morishita discloses that it is known in the art that AC generator may have an output current lower than the operating current (column 1, lines 18-21).

However, Morishita does not disclose explicitly having an alternator with an output lower current.

On the other hand, Nishimura discloses for the purpose of reducing fuel cost that an output current of an alternator may be at some point lower than the operating current of the alternator (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design an electric power system as disclosed by

Morishita and to modify the invention by explicitly disclosing that the output current may be lower for the purpose of reducing fuel cost as disclosed by Nishimura.

1. Claims 2, 4, 5, 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishita and Nishimura as applied to claim 1 above, and further in view of Clark.

The combined power system discloses all of the elements above. However, the combined power system does not disclose using pulse width modulation.

On the other hand, Clark discloses for the purpose of producing a constant output voltage and power which varies between wide limits that a regulator uses a pulse width modulator (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electric power system as disclosed above and to use pulse width modulation for the purpose of producing a constant output voltage and power which varies between wide limits as disclosed by Clark.

2. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishita, Nishimura and Clark as applied to claims 8 and 4 above, and further in view of Brkovic et al.

The combined power system discloses all of the elements above. However, the combined power system does not disclose using a switch and a sensor.

On the other hand, Brkovic et al discloses for the purpose providing a DC/DC converter with fast output voltage regulation, a DC/DC converter having switches S1 or Q1 (see figure 4). Also, the converters may use current sensors (see figure 1 & claim 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electric power system as disclosed above and to use switches and sensors with converters for the purpose providing a DC/DC converter with fast output voltage regulation as disclosed by Brkovic et al.

Response to Arguments

3. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claims 3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reasons for claims 3 and 6 to be objected are that the prior art fails to show, in combination with the base claim limitations that the AC generator has an operating characteristic in which, an output power increases as an output voltage decreases until the output power is maximum at the maximum operating point and the output power decreases as output voltage further decreases and using a DC voltage converting means for lowering an output voltage of a rectifier and supplying an output voltage to the load and performing a feedback control so that an output voltage of the voltage converter coincides with a target voltage.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



BURTON S. MULLINS
PRIMARY EXAMINER

Jcg

February 6, 2003